

REMARKS / DISCUSSION OF ISSUES

Claims 1 and 4-9 are presented for examination. Claims 1, 7 and 8 are independent claims.

Objection to the Specification

The Examiner has objected to the Specification for failing to include section headings. The Office Action states that MPEP § 608.01(a) 'appears to expressly require that the specification contain the listed headings.' Applicants direct the Examiner the noted sections of the Rules of practice and the OG Notice that indicate the contrary: these headings are permissive and not necessary. Moreover, and notwithstanding the fact the MPEP does not have the force of law, Applicants note that the Examiner's position quoted above is ambiguous and thus not persuasive.

As such, Applicants again respectfully submit that these headings are optional and not mandatory. Applicants have declined to include such headings and have respectfully requested that these objections be withdrawn. As a basis of their traversal, Applicants note that section headings are not statutorily required for filing a non-provisional patent application under 35 USC § 111(a), but per 37 CFR § 1.51(d) are only guidelines that are suggested for applicant's use. (See "Miscellaneous Changes in Patent Practice, Response to comments 17 and 18" (Official Gazette, August 13, 1996) [Docket No: 950620162-6014-02] RIN 0651-AA75 ("Section 1.77 is permissive rather than mandatory. ... [T]he Office will not require any application to comply with the format set forth in 1.77")). (See also MPEP § 608.01(a)).

Accordingly, Applicants respectfully submit that the objections to the Specification are improperly maintained in the Office Action and should be withdrawn.

Rejections under 35 U.S.C. § 101

The Office Action rejects claims 8 and 9 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter.

Applicants respectfully traverse these rejections for at least the following reasons.
The Office Action states that

“Claims 8 and 9 is/ are rejected under 25 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 9 defines “a computer program with instructions for processing...” embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and thus is non-statutory for that reason (i.e., When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Guidelines Annex IV).

The USPTO Official Gazette Notice dated 22 November 2005, entitled *“Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility”* (“the OG Notice”) merely contains guidelines for patent examiners, and like the MPEP, does not have the full force and effect of law (see the OG Notice, Section I, second paragraph). This notwithstanding, the undersigned attorney has thoroughly reviewed these guidelines and respectfully submits that the rejections of claims 8 and 9 are not compliant with those guidelines.

At the outset, Section IV of the OG Notice explains in detail the procedures to be followed to determine whether a claimed invention complies with the subject matter eligibility requirement of 35 U.S.C. § 101. The only references to “tangible results” in this procedure appear under Step IV(C) – *“Determine Whether the Claimed Invention Falls Within Sec. 101 Judicial Exceptions – Laws of Nature, Natural Phenomena and Abstract Ideas.”* Not surprisingly, the first thing the Examiner must do under Step IV(C) is to *“determine whether [a claim] covers either a Sec. 101 judicial exception or a practical application of a Sec. 101 judicial exception.”* Only if such a determination is

made, does the analysis then proceed to determine if the claimed subject matter is nevertheless still patentable subject matter, for example, because: (1) the claim provides a physical transformation (Step IV(C)(1)(a)); or (2) the claims produces a useful, concrete, and tangible result (Step IV(C)(1)(b)).

Here, the Office Action does not even attempt to determine whether any or all of claims 8 and 9 cover either a Sec. 101 judicial exception (Law of Nature, Natural Phenomenon, or Abstract Idea) or a practical application of a Sec. 101 judicial exception. Rather, the claims are dismissed with no analysis or explanation supporting this position. Indeed, Applicant respectfully submits that none of the claims 8 and 9 cover any law of nature, natural phenomenon, or abstract idea.

Claims 8 and 9 are all directed toward a computer program with instructions for processing individual images that succeed one another in a direction of succession, and for reconstructing a multi-dimensional data set from the individual images. Accordingly, the entire analysis as to whether the claims are 'descriptive material' is not even pertinent under the Guidelines, because the claims are not even directed to any Sec. 101 judicial exception in the first place.

Accordingly, for at least these reasons, Applicants respectfully submit that the rejection of claims 8 and 9 under 35 U.S.C. § 101 are improper and should be withdrawn.

Rejections under 35 U.S.C. § 102

Claims 1-4 and 7-9 were rejected under 35 U.S.C. § 102(b) as being unpatentable over *Pieper, et al.* (US Patent 5,825,908). Applicants respectfully submit that the pending claims are patentable over the applied art.

At the outset Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, a proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *See, e.g., In re*

Paulsen, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. See, e.g., *Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. See, e.g., *Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

Claim 1 is drawn to a method of processing images, and features, *inter alia*,
“...segmenting a region of interest from the one or more relevant images is performed in one or more of the individual images, wherein the segmenting is performed on the basis of information in the reconstructed slice along the cut plane through the multi-dimensional data set,
locating an edge in the reconstructed slice, wherein the segmenting in the region of interest in the one or more images is performed on the basis of the location of the edge found in the relevant...”

In a representative embodiment, shown in Fig. 2 of the filed application, a simplified representation of the slice along the cut plane 3 is shown. FIG. 2 notably shows the slices in the cut plane of the region of interest as shown in the three individual images of FIG. 1. FIG. 2 also shows that the region of interest in the reconstructed slice is clearly separated from image information outside said region of interest. **Notably distinct edges 22, 23 can be seen in the reconstructed slice. The edge of the region of interest in each of the individual images 1 is determined on the basis of the distinct edges 22, 23 in the reconstructed slice.**

The Office Action directs Applicants to column 17, lines 15-35 of the applied art. This portion of the applied art discloses:

In accordance with the present invention, the appropriately programmed computer 50 then applies a segmentation algorithm of the sort well known in the art to segment out related structure within the patient-specific 3-D database. Preferably computer 50 is programmed to apply a 3-D connected component search through the volumetric data set contained in second

section 40 of data storage device or medium 30 so as to determine the set of volumetric samples that are (i) within the range specified for blood, and which (ii) can be connected along a connected path back to one of the seeds, where each of the locations along the path is also within the range specified for blood. The result of this 3-D connected component search is a set of 3-D locations in the volumetric data set which correspond to blood flowing through the blood vessel. For the purposes of the present illustration, this set of 3-D locations can be characterized as the "blood region". The segmented anatomical structure (i.e., the blood in the blood region) can then be highlighted or otherwise identified on each of the 2-D slice images. See, for example, FIGS. 17A and 18A, where the segmented blood region in vascular tissue 205 has been cross-hatched to represent such highlighting.

Thus, the portion of the applied art relied upon in the Office Action relates to a highlighting function and not the locating of an edge and segmenting based on the location of the edge. Accordingly, the applied art fails to disclose at least one feature of claim 1. Therefore, a prima facie case of anticipation cannot be made based on this reference and claim 1 is patentable over the applied art. Moreover, claims 4-6, which depend from claim 1, are patentable as a matter of law.

Claims 7 and 8 each includes similar features to those of claim 1 described above. Therefore, these claims are patentable for at least the same reasons. Claim 9, which depends from claim 8, is patentable as a matter of law.

Rejections under 35 U.S.C. § 103

The rejections of claims 5 and 6 have been considered. While Applicants by no means concede the propriety of these rejections, because these claims depend from claim 1, these claims are patentable for at least the reasons set forth above.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:
Phillips Electronics North America Corp.

s/William S. Francos/

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